Perioperative nursing – Preoperative and Intraoperative Phase

PERIOPERATIVE NURSING

The Perioperative Period

Perioperative period is divided into three phases namely:

- preoperative phase
- intraoperative phase and
- postoperative phase

Preoperative Phase

- This extends from the time the client is admitted to the surgical unit, to the time he/she is prepared physically, psychosocially, spiritually and legally for the surgical procedure, until he/she is transported into the operating room.

ADMISSION to the Surgical Unit

↓

Preparation for Surgery:

Physical, Psychosocial, Spiritual, Legal

↓

Transport to Operating Room (OR)

Intraoperative Phase

- Extends from the time the client is admitted to the operating room, to the time of administration of anesthesia, surgical procedure is done, until he/she is transported to the recovery room (RR) / post-anesthesia care unit (PACU)

Postoperative Phase

- extends from the time the client is admitted to the recovery room, to the time he is transported back into the surgical unit, discharged from the hospital, until the follow - up care.

Preoperative Phase

- the time the patient is prepared physically, psychosocially, spiritually and legally for the surgical procedure

The Four Types of Conditions Requiring Surgery:

1) Obstruction – Imairment to the flow of vital fluids, like blood, urine, bile, CSF
2) Perforation – Rupture of an organ, ruptured appendix, ruptured uterus
3) Erosion – Wearing off of a surface or membrane, e.g. peptic ulcer
4) Tumors – Abnormal new growth, breast tumor, bone tumor, lung tumor, brain tumor.

Classification of Surgical Procedures

According to PURPOSE

1) **Diagnostic** – To confirm the presence of a disease condition, e.g. biopsy.
2) **Exploratory** – To determine the extent of the disease condition, e.g., exploratory laparotomy (exploration of the abdominal cavity and abdominal organs)
3) **Curative** – To treat the disease condition. The different types of curative surgeries are as follows:
   a) Ablative. Involves removal of an organ. Suffix used is "ectomy." E.g. Appendectomy – removal of the appendix; Hysterectomy – removal of the uterus; Oophorectomy – removal of the ovary; Mastectomy – removal of the breast; Pneumonectomy – removal of a lung; Tonsillectomy – removal of tonsils; Cholecystectomy – removal of the gall bladder.
   b) Constructive. Involves repair of congenitally defective organ. Suffixes used are "plasty," "orrhaphy," "pexy." E.g. Cheiloplasty – repair of cleft lip; Uranoplasty – repair of cleft palate; Herniorrhaphy – repair of hernia; Orchidopexy – repair of undescended testes.
   c) Reconstructive. Involves repair of damaged organ. E.g. plastic surgery after severe burns, scar revision.
4) **Palliative** – To relieve distressing signs and symptoms, not necessarily to cure the disease. E.g., colostomy, debridement of necrotic tissues, resection of nerve roots

According to DEGREE OF RISK/ MAGNITUDE/ EXTENT

1) **Major Surgery –** The criteria for major surgery are as follows:
   - Involves high risk of morbidity or mortality
   - It is extensive and prolonged. Involves a considerable period of time
   - It may involve large amount of blood loss
   - Vital organs are manipulated or removed
   - Involves great risk of occurrence of complications
   - E.g., craniotomy; open heart surgery; pneumonectomy; total abdominal hysterectomy with bilateral salpingo oophorectomy (TAHBSO).
2) **Minor surgery**
   - The procedure is not prolonged.
   - Involves lesser risk.
   - Does not usually involve serious complications.
   - E.g., appendectomy, tonsillectomy, blepharoplasty (repair of eyelids).

According to URGENCY

1) **Emergency**. The surgery should be done immediately to save the client's life or limb. E.g., emergency hysterectomy due to ruptured uterus; emergency amputation of a limb due to crushing injury; emergency appendectomy due to acute appendicitis.
2) **Imperative**. The procedure should be done within 24 to 48 hours. E.g., profusely bleeding peptic ulcer, evacuation of blood clots from the brain.
3) **Planned Required.** The procedure is necessary for the well – being of the client. However, it may be scheduled weeks or months. E.g., tonsillectomy, thyroidectomy, cataract extraction.
4) **Elective**. The procedure is not absolutely necessary for survival. Delay or omission will not cause adverse effect. E.g., removal of simple, non – toxic goiter.
5) **Optional**. The procedure is requested by the client. It is usually for aesthetic purposes. E.g., rhinoplasty (repair of the nose); blepharoplasty (repair of the eyelids).

Surgical risk patient:

- Extremes of age (very young & very old)
- Extremes of weight (emaciation & obesity)
- Dehydrated patients with severe trauma or injury
- Nutritional deficits
- Patients with severe trauma or injury, infection/ sepsis
- Patients with cardiovascular disease
- Patients with endocrine dysfunction (DM)
- Hypertensive and hypotensive patients
- Hypovolemia
- Hepatic disease
- Preexisting mental of physical disability

GOALS of Nsg Care During Preop:

- Assessing and correcting physiologic and psychologic problems that might increase surgical risk.
- Instructing and demonstrating exercises that will benefit the person during postoperative period.
- Planning for discharge and any projected changes in lifestyle due to surgery.

Preoperative Nursing Assessment

Physiologic Assessment of the Client Undergoing Surgery

The physical preparations of the patient before surgery include the following:

1) Correcting any dietary deficiencies.
2) Reducing an obese person's weight, as time permits.
3) Correcting fluid and electrolyte imbalances.
4) Restoring adequate blood volume with blood transfusion.
5) Treating chronic diseases – DM, heart disease, renal insufficiency, bleeding disorders.
6) Treating any infectious process
7) Treating an alcoholic person with vitamin supplementation, IV fluids or oral fluids, if dehydrated.

Psychosocial Assessment of the Client Undergoing Surgery

The common causes of fears of the preoperative client are as follows:

1) Fear of the unknown. This is the greatest fear of most patients undergoing surgery.
2) Fear of anesthesia. Many patients fear their vulnerability while unconscious. They also fear the potential complications of anesthesia including death.
3) Fear of pain. Patients fear the agony, suffering, or distress that may result from the surgical procedure especially postop wound and from contraptions.
4) Fear of death. This is due to the risk of complications of anesthesia and the surgical procedure, itself.
5) Fear of disturbance of body image. For example, loss of limb, loss of reproductive organs, alteration in bowel and bladder elimination, cause disturbance of a person's body image.
6) Fear and worries from loss of finances, employment, social and family roles.

The nurse should assess the client for manifestations of fear that include the following:

- Anxiousness
- Anger
- Tendency to exaggerate
- Sad, evasiveness, tearfulness, and clinging behavior
- Inability to concentrate
- Short attention span
- Failure to carry out simple directions
- Dazed appearance

The nurse may implement the following nursing interventions to minimize anxiety:

- Explore the client's feelings
- Allow client's to speak openly about fears and concerns.
- Give accurate information regarding surgery.
- Provide empathetic support. Accept individual's reactions to the surgical experience.
- Consider the person's cultural and religious preferences. Arrange for visit by chaplain/priest/ minister/religious adviser as desired by the patient and his family.

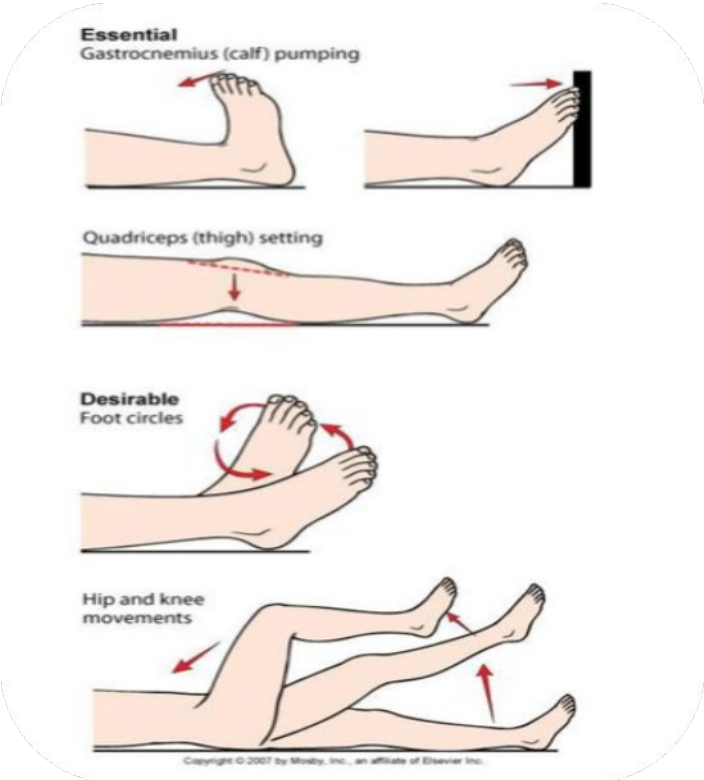
Informed Consent

- The Legal Aspects of Surgical Interventions: Written Informed Consent/ Operative Permit/ Surgical Permit
- The PURPOSES of the written informed consent are as follows:
  1) To ensure that the client understands the nature of the treatment including the potential complications and disfigurement. These are explained by the surgeon.
  2) To indicate that the client's decision was made without pressure.
  3) To protect the client against unauthorized procedure.
  4) To protect the surgeon and the hospital against legal action by a client who claims that an unauthorized procedure was performed.
- The circumstances requiring written informed consent are as follows:
  1) Any surgical procedure where scalpel, scissors, suture, hemostats of electrocoagulation may be used
  2) Any invasive procedure, or procedure that involves entry into a body cavity. E.g. paracentesis, bronchoscopy, cystoscopy, colonoscopy, proctosigmoidoscopy.
  3) Any procedure that involves general anesthesia, local infiltration anesthesia or regional block anesthesia
- The requisites for validity of written informed consent are as follows:
  - Written permit/ consent is best and is legally acceptable.
  - Patient's signature is obtained with the client's complete understanding of what is to occur.
  - Adults sign their own consent unless he/she is physically and mentally incapacitated.
  - If the patient is a child or minor (below 18 years old), the parent or legal guardian will sign the consent.
  - Consent is obtained before sedation.
  - The patient is not under the influence of drugs or alcohol & is secured without pressure or duress or threat.

- Signature of witness is required. The nurse, physician or other authorized persons may sign as witness
- NURSING PRIORITY: The consent/permit should be signed before the client receives preoperative medications
- In an emergency, permission via telephone is acceptable. The physician should document the nature of the emergency situation.
- Emancipated minors are allowed to sign without written consent. (Emancipated minors are those who are married, those who live on their own or financially independent from their parents. This is applicable in the U.S. only.)

Preparation of the patient before surgery includes EXERCISES that will prevent postoperative complications.

- Deep breathing and coughing exercises. To promote adequate lung expansion and ventilation, and expel mucous secretions.
- Incentive spirometry. To enhance deep inspiration and promote maximum lung expansion
- Turning exercises. To promote adequate lung expansion, promote circulation, and prevent pressure sores.
- Foot and leg exercises. Flexion and extension exercises of the lower extremities promote circulation; prevent venous stasis, thereby preventing thrombophlebitis.

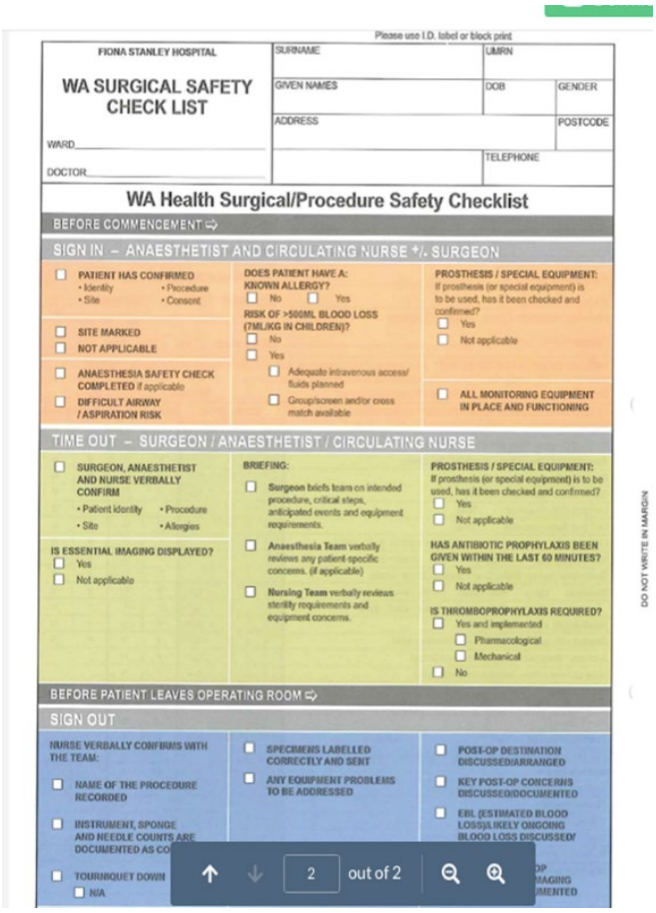


Preparation of the patient the evening before the surgery include the following:

1) **Preparing the skin**
   - It is ideal for the patient to bathe or shower, using a bacteriostatic soap to reduce microorganisms in the skin
   - Shaving should be performed as close to the operative time as possible. Hair grows again, overnight. Shaving should be done in the direction of hair growth.
2) **Preparing the Gastrointestinal Tract**
   - Preparation of the bowel for intestinal surgery to prevent escape of bacteria and sepsis includes the following:
     - Cathartics and enemas.
     - Oral antimicrobials to reduce bacterial flora.
     - Enemas "until clear" the evening before surgery. No more than three enemas should be given to prevent fluid – electrolyte imbalances.
     - NPO for 6 hours before surgery. Patients having morning surgery are kept NPO from midnight. Clear fluids, like water may be given up to 4 hours before surgery if ordered to help client swallow medications
3) **Preparing for Anesthesia**
   - The patient should avoid alcohol and cigarette smoking for at least 24 hours before surgery. This can help reduce potential complications of anesthesia.
4) **Promoting Rest and Sleep**
   - Provide comfort measures, e.g. clean gown and linens, correct room temperature, subdued lighting, back rub. Administer sedative as ordered.

When preparing the patient on the day of surgery, the nurse should include the following:

1) Awaken the patient, one hour before preoperative medications.
2) Provide morning bath and mouth wash.
3) Provide clean gown.
4) Remove hairpins, braid long hairs, cover hair with cap.
5) Remove dentures, foreign materials (chewing gum) from patient's mouth.
6) Remove colored nail polish, hearing aid, contact lens, jewelries. If the patient refuses to remove the wedding ring, tie it with gauze and fasten around the wrist.
7) Take baseline vital signs before administration of preop medications.
8) Check patient identification (ID) band and area of "skin prep" as applicable.
9) Check for special orders, e.g. enema, gastrointestinal tube insertion, IV line. Ensure that these orders are carried out.
10) Check if NPO is maintained.
11) Have client void before administration of preop medications. Some preop medications may cause hypotension and increase risk for falls. For patient safety, put up side rails, put call light within patient's reach, and instruct patient to ask for help if he/she needs to void.
12) Continue to support the patient emotionally. Anxiety level may be high at this time.
13) Accomplish the "Preop Care Checklist".
14) BEST PRACTICE: If surgery will be done to a body part which is present on both sides of the body, e.g., eyes, ears, arms, breasts, legs, practice "TIME OUT" to check if the right patient is sent for surgery. Avoid SENTINEL EVENT related to surgery of the wrong body part.



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FIONA STANLEY HOSPITAL

WA SURGICAL SAFETY CHECK LIST

SURNAME | UMRN | GIVEN NAMES | DOB | GENDER | ADDRESS | POSTCODE | TELEPHONE | WARD | DOCTOR

WA Health Surgical/Procedure Safety Checklist

BEFORE COMMENCEMENT ⇨

SIGN IN – ANAESTHETIST AND CIRCULATING NURSE +/- SURGEON

- PATIENT HAS CONFIRMED • Identity • Procedure • Site • Consent
- SITE MARKED / NOT APPLICABLE
- ANAESTHESIA SAFETY CHECK COMPLETED if applicable
- DIFFICULT AIRWAY / ASPIRATION RISK
- DOES PATIENT HAVE A KNOWN ALLERGY? No / Yes
- RISK OF >500ML BLOOD LOSS (7ML/KG IN CHILDREN)? No / Yes – Adequate intravenous access/ fluids planned; Group/screen and/or cross match available
- PROSTHESIS / SPECIAL EQUIPMENT: If prosthesis (or special equipment) is to be used, has it been checked and confirmed? Yes / Not applicable
- ALL MONITORING EQUIPMENT IN PLACE AND FUNCTIONING

TIME OUT – SURGEON / ANAESTHETIST / CIRCULATING NURSE

- SURGEON, ANAESTHETIST AND NURSE VERBALLY CONFIRM • Patient identity • Procedure • Site • Allergies
- IS ESSENTIAL IMAGING DISPLAYED? Yes / Not applicable
- BRIEFING: Surgeon briefs team on intended procedure, critical steps, anticipated events and equipment requirements.
- Anaesthesia Team verbally reviews any patient-specific concerns. (if applicable)
- Nursing Team verbally reviews sterility requirements and equipment concerns.
- PROSTHESIS / SPECIAL EQUIPMENT: If prosthesis (or special equipment) is to be used, has it been checked and confirmed? Yes / Not applicable
- HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES? Yes / Not applicable
- IS THROMBOPROPHYLAXIS REQUIRED? Yes and implemented – Pharmacological / Mechanical / No

BEFORE PATIENT LEAVES OPERATING ROOM ⇨

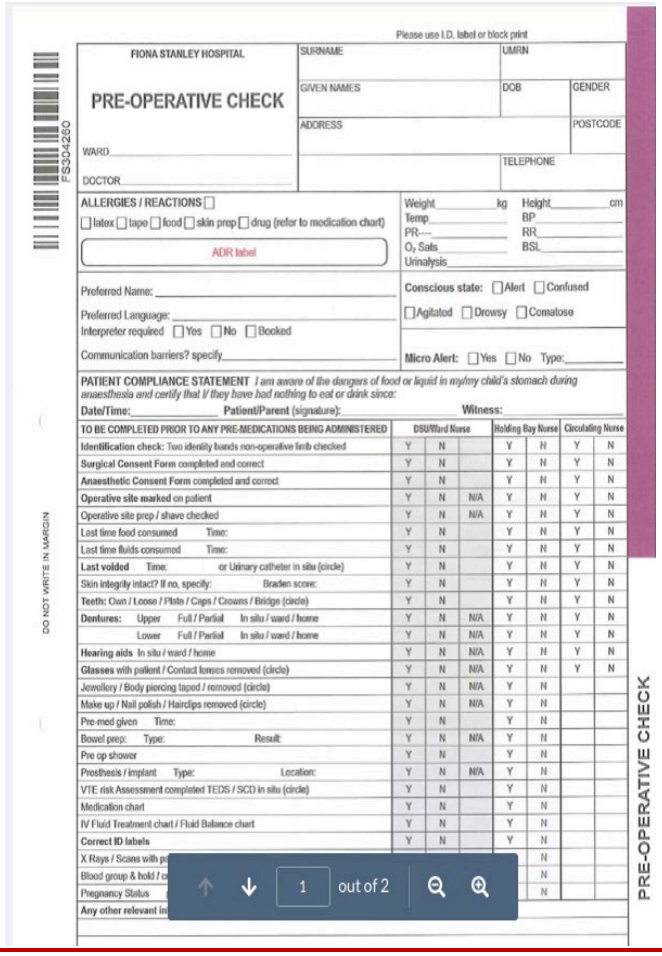
SIGN OUT

NURSE VERBALLY CONFIRMS WITH THE TEAM:

- NAME OF THE PROCEDURE RECORDED
- INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE DOCUMENTED AS CO
- TOURNIQUET DOWN / N/A
- SPECIMENS LABELLED CORRECTLY AND SENT
- ANY EQUIPMENT PROBLEMS TO BE ADDRESSED
- POST-OP DESTINATION DISCUSSED/ARRANGED
- KEY POST-OP CONCERNS DISCUSSED/DOCUMENTED
- EBL (ESTIMATED BLOOD LOSS)/LIKELY ONGOING BLOOD LOSS DISCUSSED/

DO NOT WRITE IN MARGIN

2 out of 2



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FIONA STANLEY HOSPITAL

PRE-OPERATIVE CHECK

SURNAME | UMRN | GIVEN NAMES | DOB | GENDER | ADDRESS | POSTCODE | TELEPHONE | WARD | DOCTOR

FS304260

ALLERGIES / REACTIONS ☐ latex ☐ tape ☐ food ☐ skin prep ☐ drug (refer to medication chart)

ADR label

Weight ____ kg Height ____ cm
Temp ____ BP ____
PR ____ RR ____
O_2 Sats ____ BSL ____
Urinalysis ____

Preferred Name: ____
Preferred Language: ____
Interpreter required ☐ Yes ☐ No ☐ Booked
Communication barriers? specify ____

Conscious state: ☐ Alert ☐ Confused ☐ Agitated ☐ Drowsy ☐ Comatose

Micro Alert: ☐ Yes ☐ No Type: ____

PATIENT COMPLIANCE STATEMENT *I am aware of the dangers of food or liquid in my/my child's stomach during anaesthesia and certify that I/ they have had nothing to eat or drink since:*

Date/Time: ____ Patient/Parent (signature): ____ Witness: ____

TO BE COMPLETED PRIOR TO ANY PRE-MEDICATIONS BEING ADMINISTERED	DSU/Ward Nurse			Holding Bay Nurse		Circulating Nurse	
Identification check: Two identity bands non-operative limb checked	Y	N		Y	N	Y	N
Surgical Consent Form completed and correct	Y	N		Y	N	Y	N
Anaesthetic Consent Form completed and correct	Y	N		Y	N	Y	N
Operative site marked on patient	Y	N	N/A	Y	N	Y	N
Operative site prep / shave checked	Y	N	N/A	Y	N	Y	N
Last time food consumed Time:	Y	N		Y	N	Y	N
Last time fluids consumed Time:	Y	N		Y	N	Y	N
Last voided Time: or Urinary catheter in situ (circle)	Y	N		Y	N	Y	N
Skin integrity intact? If no, specify: Braden score:	Y	N		Y	N	Y	N
Teeth: Own / Loose / Plate / Caps / Crowns / Bridge (circle)	Y	N		Y	N	Y	N
Dentures: Upper Full / Partial In situ / ward / home	Y	N	N/A	Y	N	Y	N
Lower Full / Partial In situ / ward / home	Y	N	N/A	Y	N	Y	N
Hearing aids In situ / ward / home	Y	N	N/A	Y	N	Y	N
Glasses with patient / Contact lenses removed (circle)	Y	N	N/A	Y	N	Y	N
Jewellery / Body piercing taped / removed (circle)	Y	N	N/A	Y	N		
Make up / Nail polish / Hairclips removed (circle)	Y	N	N/A	Y	N		
Pre-med given Time:	Y	N		Y	N		
Bowel prep: Type: Result:	Y	N	N/A	Y	N		
Pre op shower	Y	N		Y	N		
Prosthesis / implant Type: Location:	Y	N	N/A	Y	N		
VTE risk Assessment completed TEDS / SCD in situ (circle)	Y	N		Y	N		
Medication chart	Y	N		Y	N		
IV Fluid Treatment chart / Fluid Balance chart	Y	N		Y	N		
Correct ID labels	Y	N		Y	N		
X Rays / Scans with p					N		
Blood group & hold / c					N		
Pregnancy Status					N		
Any other relevant in							

DO NOT WRITE IN MARGIN

PRE-OPERATIVE CHECK

1 out of 2

Preoperative Medications/ Preanesthetic Drugs Purposes:

- To facilitate the administration of any anesthetic.
- To minimize respiratory tract secretions and changes in heart rate.
- To relax the client and reduce anxiety
- **Types of Preop Medications:**
  1) Opiates – morphine (Roxanol) and meperidine (Demerol) are given to relax the patient and potentiate anesthesia.
  2) Anticholinergics – atropine sulfate, scopolamine, and glycopyrrolate (Robinul) are given to reduce respiratory tract secretions and to prevent severe reflex slowing of the heart during anesthesia.
  3) Barbiturates/ Tranquilizers – Phenobarbital (Nembutal) and other hypnotic agents are given the night before surgery to help ensure a restful night's sleep.
  4) Prophylactic antibiotic - administered just before or during surgery when bacterial contamination is expected; ideally before skin incision is made
- BEST PRACTICE: Preanesthetic medications should be given exactly the time they are prescribed. If given too early, the maximum potency will have passed before it is needed; if given too late, the action will not have began before anesthesia is started.
- When transporting the patient to the operating room, promote safety.

Care of the patient's family includes the following:

1) Directing the family to the proper visiting room or waiting lounge.
2) Informing them that they will be contacted by the surgeon immediately.
3) Explaining reason for long interval of waiting. This is due to anesthesia preparation, skin prep, surgical procedure and recovery room/post anesthesia care unit stay. This action helps prevent unnecessary anxiety by the family.
4) Explaining what to expect during the postoperative period, e.g., IV fluids, blood transfusions, oxygen therapy, tubes and other contraptions

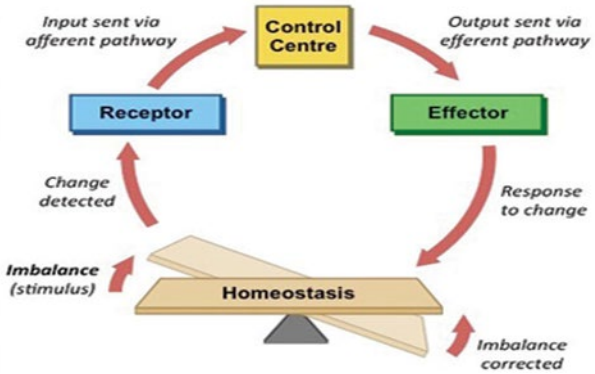
Preop checklist day of surgery

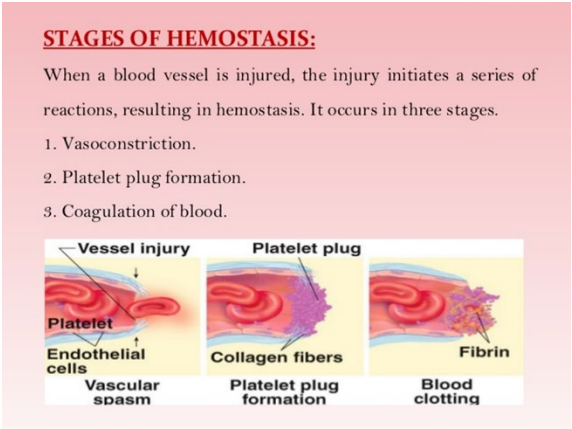
- Preoperative education completed
- Informed consent signed
- NPO – Bowel prepo
- Skin prep – shower or bath in antimicrobial soap
- Documentation/ checklist of valuables
- Voided prior to transfer
- Preop meds – given and charted
- Side rails up after preop bed in low position
- Hospital gown
- Allergy band ID band
- Dentures, eyeglasses, hearing aids, contacts – left in place or removed
- Makeup and nail polish removed
- Vital signs before transfer
- Preoplab work on chart, surgeon notified abnormal values
- Medication: history, MAR on char, HER/ EMR up to date, high alert meds noted.

Intraoperative Phase

Goals of Care During Intraoperative Period

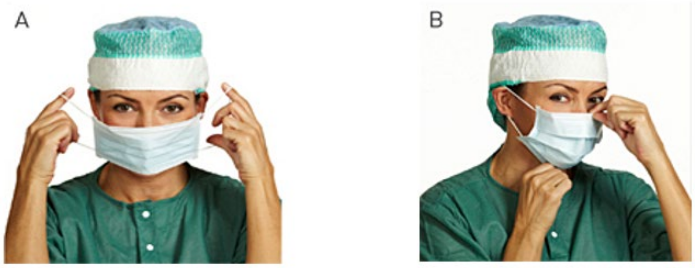
- Asepsis and Infection Control
- Homeostasis
- Safe administration of anesthesia
- Hemostasis

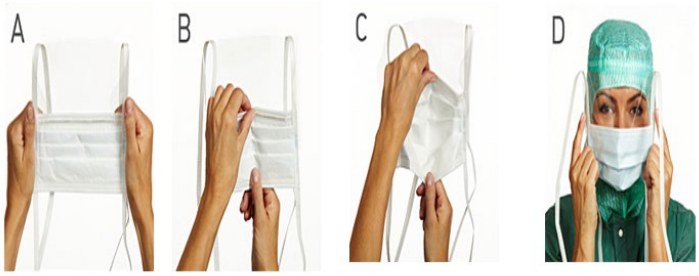




Surgical Conscience

- Means attention to aseptic principles during the perioperative period.
- It involves constant inspection, monitoring and regulation of the surgical patient, environment, personnel and equipment.
- The nurse anticipates the patient's and the surgical team's needs and gives unselfish, vigilant care to the patient.
- **Attire:**
  - Purpose: To provide effective barriers that prevent the dissemination of microorganisms to the patient and to protect personnel from infected patients
  - Consists of body covers such as:
    - Scrub suit/ dress
    - Head cover / Bonnet/ Cap
    - Mask
    - Sterile gloves
    - Scrub Shoes (worn only inside the OR)
    - (Surgical glasses/ Visor)





Operating Room Divisions

Design & Traffic Pattern – 3 Zone Concept

1) Unrestricted Area which includes the patient reception area, locker rooms, lounges and offices
2) Semi-restricted Areas which include the storage areas for clean and sterile supplies, work areas for storage

and processing of instruments and corridors to restricted areas of the suite. Traffic is limited to authorized personnel and patients. Personnel are required to wear gown and hair covering.

3) Restricted Area includes all areas where personnel are required to wear surgical masks and scrub attire at all times. It includes operating suites, clean core and scrub areas.

"Implementation of strategies, such as storage of instruments and components in the operating room and education of OR personnel, is required to reduce door openings in the OR."

American Journal of Medical Quality

- Measurement of Foot Traffic in the Operating Room: Implications for Infection Control
- Surgical site infections cause significant morbidity and mortality in the postoperative period. Opening of the operating room door disrupts its filtered atmosphere, increasing contamination above the wound.
- We conducted a study of traffic in the operating room as a risk for infections. This is an observational study of recorded behaviors in the operating room.
- Data collected included number of people entering/exiting, the role of these individuals, and the cause for the event. A total of 3071 door openings were recorded in 28 cases.
- Traffic varied from 19 to 50 events per hour across specialties.
- The preincision period represented 30% to 50% of all events. Information requests accounted for the majority of events. Door openings increase in direct proportion to case length, but have an exponential relationship with the number of persons in the operating room. There is a high rate of traffic across all specialties, compromising the sterile environment of the operating room. (Am J Med Qual. 2009;24:45-52)
- Perioperative nurses at our institution voiced concerns about the amount of traffic in the ORs. We formed a workgroup consisting of perioperative nurses, educators, and leaders and initiated a quality improvement (QI) project to identify the amount of OR traffic that occurs during a procedure.
- The workgroup developed a check sheet to record door swings, staff classifications, reasons for opening the door, and the number of people in the OR at 15-minute intervals.
- Baseline results showed that average door swings ranged from 33 per hour in general surgery to 54 per hour in cardiac surgery.
- Nurses accounted for the most traffic, citing retrieving supplies as the main reason. Interventions focused on decreasing nurse traffic for retrieval of supplies in general surgery.
- Follow-up observations showed that average door swings increased to 41 per hour in general surgery, but nurse traffic decreased. Monitoring and limiting traffic could positively affect patient safety and outcomes.
- "Principles remain the same; it is the degree of adherence that varies"

Preparation for Surgery

- The skin of the patient and the members of the surgical team require disinfection before the surgical procedure begins.
- The commonly used antimicrobial agents include povidone-iodine, chlorhexidine, alcohol, and hexachlorophene.
- Before the application of the chosen antimicrobial agent, the patient's skin may be prepared by shaving, clipping (trimming), or using a depilatory.

The skin of the surgical team is scrubbed, using a brush and nail cleaner or a foam preparation for a length of time determined by the facility.

Prepare the field using the principles of asepsis.

Patient Positioning

- Provides optimal visualization
- Provides optimal access for assessing and maintaining anesthesia and function
- Protects patient from harm

Positioning the Client for Surgery

1) Supine

- Back-lying position.
- Careful placement of the extremities is important to avoid injury. The most common injury occurs to the brachial plexus when the arm is abducted greater than 90 degrees. Fingers, elbows and bony prominences must be supported with padding to prevent pressure.
- Most commonly used surgical position. It is the basic position for most abdominal surgery and is also frequently used in orthopedic, urologic, ophthalmologic, otorhinolaryngologic, plastic and thoracic operations.

2) Trendelenburg's

- Variation of supine position with the patient's head positioned down.
- Shift of the abdominal viscera impedes free movement of the diaphragm and intrathoracic pressure is increased.
- When requested it is usually intended to facilitate surgical exposure during colorectal or genitourinary procedures..

3) Lithotomy

- Lying on the back with the legs flexed and supported on stirrups.
- Decreases respiratory effectiveness because the diaphragm is restricted.

- Two members of the surgical team should move the legs simultaneously to prevent sacroiliac dislocation.
- Used to manipulate a surgical instrument either in the vagina or in a perineal incision.

4) Modified Fowler's

- Or sitting position is physiologically best for respiratory function.
- Venous pooling may lead to hypotension.
- It's overall use has decreased. It may be used for neck dissections or dental problems.

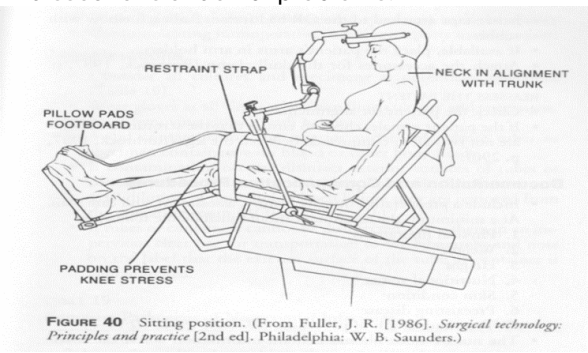


FIGURE 40 Sitting position. (From Fuller, J. R. [1986]. *Surgical technology: Principles and practice* [2nd ed]. Philadelphia: W. B. Saunders.)

5) Lateral / (lateral decubitus position)

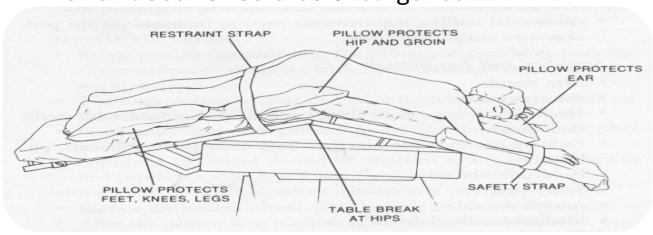
- Side – lying or lateral position decreases respiratory efficiency because the body's weight is on the lower chest.
- May interfere with respiratory efficiency.
- Peripheral nerve injuries can occur in faulty position of the arm.
- Has been associated most commonly with thoracotomies for cardiothoracic procedures, but may also be used to advantage for renal, obstetric, gynecologic, neurosurgical and orthopedic operations.

6) Prone / (ventral decubitus position)

- Face – down position requires the patient to be anesthetized on the stretcher being turned over on the abdomen.
- Respiration is restricted because of the weight of the body on the abdomen; the BP may fall.
- Used for posterior craniotomies and for spine-related procedures, such as spinal fusions, resections of masses (e.g., lipomas) and repair of dermal defects.

7) Jackknife (Kraske position)

- Respiratory system is severely compromised
- Blood pooling in the extremities occur
- Similar to Knee-Chest or Kneeling **positions** and is often **used for** colorectal surgeries.



BEST PRACTICE: When positioning the client for surgery, the nurse should do the following:

- Explain the purpose of the position to the client.
- Avoid undue pressure on any body part.
- Strap the client securely but snugly to prevent falls.
- Maintain adequate respiratory and circulatory function.
- Ensure good body alignment

Position patient during surgery	
Abdominal surgeries	supine
Bladder surgery	Trendelenburg (slightly)
Perineal surgery	Lithotomy
Brain surgery	Modified fowler's/ sitting
Spinal cord surgery	Prone
Colorectal surgery	Kraske

Anesthesia

- The goals of anesthesia are to provide analgesia, sedation and muscle relaxation, as well as to control the autonomic nervous system
- Anesthetics are classified as general and local.
  - General anesthetics depress the CNS, alleviate pain, and cause a loss of consciousness.
  - Local anesthetics block pain at the site of administration, allowing consciousness to be maintained.
- Balanced anesthesia, a combination of drugs, is frequently used in general anesthesia, balanced anesthesia generally includes the following:
  1) A hypnotic given the night before;
  2) Premedication, such as narcotic analgesic or benzodiazepine (e.g., Midazolam [Versed]) and an anticholinergic (e.g., atropine, robinul), given about 1 hour before surgery to decrease secretions.
  3) A short-acting barbiturate, such as thiopental sodium (Pentothal);
  4) An inhaled gas, such as nitrous oxide and oxygen;
  5) A muscle relaxant, e.g. Anectine (Succinyl Choline), Pavulon (Pancuronium Hydrobromide).

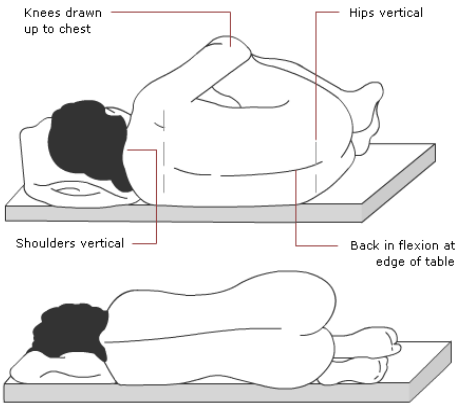
Common Anesthetic Techniques

1) Conscious Sedation

- Patient remains conscious with some alteration of mood, drowsiness and sometimes analgesia.
- Protective reflexes remain intact.

- Commonly used drugs include morphine, meperidine, fentanyl, diazepam (valium), midazolam (versed).

2) **Deep Sedation**
   - Patient is asleep but easily arousable.
   - Protective reflexes are minimally depressed.
3) **General Anesthesia**
   - Complete loss of consciousness.
   - A reversible state that provides analgesia, muscle relaxation and sedation
   - Protective reflexes are lost.
   - Produced by IV or inhaled anesthetics
4) **Regional anesthesia**
   - Production of anesthesia in a specific body part.
   - Achieved by injecting local anesthetics in close proximity (usually by injection) to appropriate nerves. (Nerve Block)
5) **Spinal Anesthesia**
   - Local anesthetic is injected into lumbar intrathecal space.
   - Anesthetic blocks conduction in spinal nerve roots and dorsal ganglia; paralysis and analgesia occur below the level of injection.
6) **Epidural Anesthesia**
   - Achieved by injecting local anesthetic into epidural space by way of a lumbar puncture.
   - Results are similar to spinal analgesia
7) **Peripheral Nerve Blocks**
   - Achieved by injecting local anesthetic to anesthetize the surgical site.



Stages of anesthesia

- **Stage I: Analgesia (Beginning Anesthesia)**
  - patient may have ringing, still conscious, sense inability to move extremities
  - noises are exaggerated
  - avoid unnecessary noises or motions
- **Stage II: Excitement**
  - characterized by struggling, shouting, talking, crying. (agitation)
  - pupils dilate, rapid pulse and irregular RR
  - restrain the patient
- **Stage III: Surgical Anaesthesia**
  - surgical anaesthesia is reached
  - patient unconscious and lies quietly
  - respirations are regular and CR
  - may be maintained in hours if properly given
- **Stage IV: Medullary Depression**
  - stage is reached when too much anesthesia is given
  - RR become shallow, pulse is weak and thready, pupils widely dilated
  - Without proper treatment death will follow
  - Discontinue anesthetic abruptly

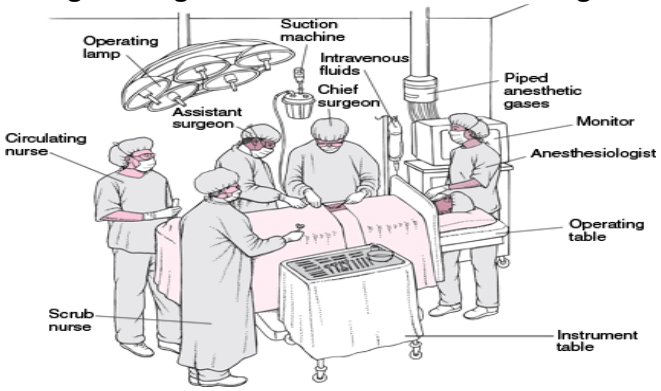
Complications and Discomforts of Spinal Anesthesia

- Hypotension
- Nausea/ vomiting
- Headache
- Respiratory Paralysis
- Neurologic complications (e.g. paraplegia, severe muscle weakness of the legs)

BEST PRACTICE: Blood pressure should be monitored during administration of nerve block local anesthetic, because hypotension may occur

Activities during the Intraoperative

Assisting the surgeon as scrub nurse or circulating nurse

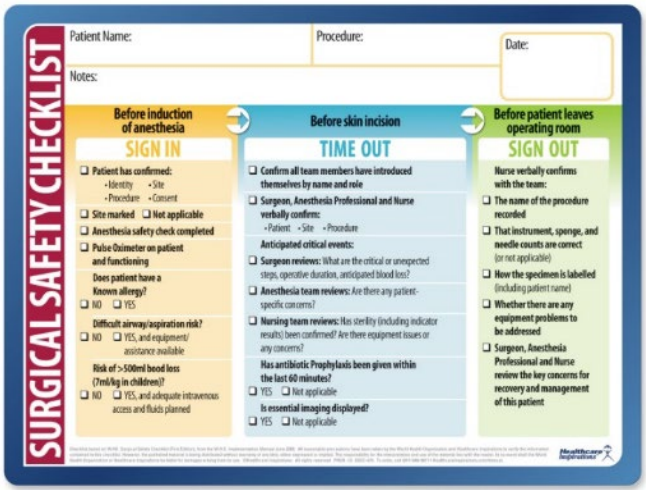


Scrub Nurse

- Assists the surgical team
- Maintains sterility
- Handles instruments, prepares sutures, receives specimen, counts
- Drapes patient
- Wears sterile gown, gloves

Circulating Nurse

- Assists the Scrub nurse, opens& obtains instrument, keeps record, adjust lights, receives specimen, coordinates
- Positions the patient for surgery



Surgical Incisions

- Butterfly Incision. For craniotomy.
- Limbal Incision. For eye surgeries.
- Halstead / Elliptical Incision. For breast surgeries (mastectomy).
- Abdominal Incision. For abdominal surgeries (e.g. midline abdominal incisions; paramedian incisions).
- Mc Burney's Incision. For appendectomy.
- Pfannenstiel Incision. For Cesarian section. Also called "bikini line" incision.
- Lumbotomy or Transverse Incision. For kidney surgeries.